

TCIP FY2013 Round 1 - Grant Awardees

Project Name	Univ.	Cluster	Status	Award Amount	Contact	Description (Summary)	Detailed Description
BlackBox	USU	MMEE	Licensee	\$40,000	Zac Humes	Black Box Engineering is developing a solenoid-actuated coanda assisted spray manipulation (CSM) technology that works to change the flow direction of a thermal spray	Black Box Engineering is developing a solenoid-actuated coanda assisted spray manipulation (CSM) technology that works to change flow direction of a thermal spray. Thermal spray devices are used in many industries from clean energy to defense aviation, but they all use a line-of-site process, spraying the process flow in a limited range and requiring manual repositioning for directional change of the flow. Black Box's CSM is unique for its ability to change the direction of the process flow itself as it leaves the nozzle, rather than by moving the entire device which provides precise, rapid control of spray angles over complex geometries, limits over-spray, and increases the efficiency of the process.
BrandHub	WSU	IT	Licensee	\$40,000	T Hughes	The BrandHub platform utilizes software that collates and coordinates various social networks into a seamless web page that can be used to augment and manage a brand's social networking presence online.	The BrandHub platform utilizes proprietary software that collates and coordinates various social networks into a seamless web page that can be used to augment and manage a brand's social networking presence online. Clients using BrandHub can easily host and manage all of their individual personalities' content being posted to social media. BrandHub provides tools tailored to the client and their personalities to seamlessly create, post, manage and distribute their content across Twitter and Facebook. BrandHub's design and utility set it apart from our competitors who are primarily concentrated in offering services that encourage end-user interaction exclusively versus social network management. BrandHub allows each user from a Brand to access their accounts both online and mobile to interact with all of their accompanying social networks. Set-up for their white-labeled platform is simple and only requires registering a social network once; Login is remembered and secured through the BrandHub platform. The BrandHub design takes work from our programming team to establish a portal for each brand that is unique and conveys a layer of customization to it. BrandHub plans to make each customer get a portal for their social networking that is consistent with their overall brand look and feel. Thus, we deliver a technology that solves several major problems while providing a consistent end-user experience that is great looking.
DAISI	WSU	IT	University	\$40,000	Trevor McKendrick	DAISI is an optical laser technology that counts and measures in-air microscopic suspended particles.	DAISI is an optical laser technology that counts and measures in-air microscopic suspended particles. Real-time analysis of DAISI imagery simultaneously characterizes particle shape, concentration, motion, and optical contrast. Applied to aerosols, DAISI enables more comprehensive characterization of individual particles than is possible with any combination of existing tools.
DecipherGenX	UU	LS	Licensee	\$40,000	Dennis Farrar	Decipher is developing the first objective diagnostic tests for CFS, FM & MDD.	Decipher is developing the first objective diagnostic tests for CFS, FM & MDD. Preliminary gene expression results suggest the ability to distinguish between these often overlapping disorders (70% of CFS patients meet FM criteria). A test for FM will be developed initially since the FM patient population is two to three times larger than CFS. There are three current FDA-approved therapeutics to treat FM: Pfizer's Lyrica, Lilly's Cymbalta, Forest's Savella, and it may be possible to identify patients most responsive to a particular treatment using Decipher's biomarkers. Future objectives are to monitor individual patient drug response and predict drug benefit for targeted disorders.
Elute	UU	LS	Licensee	\$40,000	Mary Campos	ElutiBone™ is an antibiotic polymer that will aid in resolving associated with orthopedic surgeries.	An antibiotic-releasing degradable polymer coated on widely-used synthetic bone grafts, ElutiBone™, licensed from UofU, seeks to resolve infections associated with orthopedic surgeries. ElutiBone's release kinetics enable sustained antibiotic delivery to orthopedic surgical sites over a clinically relevant 6 to 8 weeks. This is a major advance over currently available bone grafts that release antibiotics over short durations at sub-therapeutic levels, often promoting growth of drug-resistant bacteria. ElutiBone mitigates the threat of costly infections related to joint replacement revision, \$50,000 procedures can have up to 15% infection rates and infectious recurrence of 20 to 30%.

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ImmViz	UU	LS	University	\$40,000	Leonard F. Pease	ImmViz is developing a radioimmunodiagnostics to image and diagnose eosinophilic esophagitis (EoE), an allergic condition of the esophagus.	We seek support to develop radioimmunodiagnostics to image and diagnose eosinophilic esophagitis (EoE). EoE is an allergenic condition of the esophagus due to invasion and degranulation of eosinophils (a white blood cell) in the esophageal lumen, leading to esophageal occlusion, unexpected emergency room visits, multiple endoscopies and failure to thrive in children. Our noninvasive radioimmunodiagnostic approach combines orally delivered heparin, which binds preferentially to eosinophil granule proteins (negligible in healthy subjects), with radiolabels (negligible background radiation at energies of interest) to create 3D molecular maps of the entire esophagus. Such maps are unavailable using current techniques, which are invasive.
Jade	UU	LS	Licensee	\$40,000	Barbara Wirostko	Jade Therapeutics has invented a novel, locally administered, sustained-release, drug-eluting, bioresorbable product to help address severe, persistent corneal damage associated with ocular injury, disease, or surgery.	Jade Therapeutics has invented a novel, locally administered, sustained-release, drug-eluding, bioresorbable product to help address severe, persistent corneal damage associated with ocular injury, disease, or surgery. The initial biologic being delivered is marketed recombinant human growth hormone, which has already been proven safe and efficacious when used systemically for enhancing and activating growth. Preliminary data indicate that Jade's solution has the potential to meet the need of corneal epithelial surface repair for non-healing corneal defects, improve patient compliance, decrease frequency of topical administration/office visits, and improve visual function and overall quality of life. Currently no approved therapies exist specifically to heal the cornea and no compounds in development are focused on activating cellular healing.
Lazarus	UU	LS	Licensee	\$40,000	Harrison Lazarus	Lazarus Medical is developing a moving chest tube that will traverse the thoracic cavity to improve evacuation of fluid without additional surgery.	Stationary chest tubes have been the norm since 1875 and remove only what is in their immediate vicinity. Frequently, additional tubes have to be placed to provide adequate drainage. The moving chest tube will traverse the thoracic cavity to improve evacuation of fluid without additional surgery. Surgically it is expected that a moving chest tube will speed resolution of the patient's problem allowing earlier patient discharge and few complications due to fewer surgical interventions. A prototype built from available chest tubes to demonstrate feasibility is capable of moving in a 180-degree arc. The grant will be utilized to finalize our prototype as well as move forward with testing and development towards commercialization.
Microsurgical	UU	LS	Licensee	\$40,000	Jay Agarwal	Microsurgical Innovation is developing a vascular anastomotic device, that will replace the hand suturing technique currently used to connect vessels in microsurgery and macrovascular end-to-end vascular repair surgeries.	The objective of this proposal is to develop a commercially viable vascular anastomotic device, referred to as a vascular coupling device (VCD), which would replace the hand suturing technique currently used to connect vessels in microsurgery and macrovascular end-to-end vascular repair surgeries. This device would consist of a barbed cap that would be placed at the end of each vessel and then connected together to attach the two vessel ends. This approach would reduce the time required in the surgery suite, reduce costs associated with surgery, and reduce the likelihood of failure of the anastomoses, by minimizing human error and stenting open the anastomosis. There are currently no anastomotic devices available that work for both arteries and veins. This technology has the ability to simplify technically challenging microvascular repair and to expand the scope of microsurgery by facilitating these types of procedures in third world countries and in battlefield hospital settings.
NanoSynth	UU	LS	Licensee	\$40,000	Swomitra Mohanty	NanoSynth's sensing device is an inexpensive and new rapid sensing methodology for detection of tuberculosis (TB).	The sensing device is an inexpensive and new rapid sensing methodology for detection of tuberculosis (TB) at the point of care based on volatile biomarkers given off by mycobacterium that cause TB. This technology utilizes a solid-state sensor based on functionalized 3D TiO2 nanotube arrays that bind the volatile biomarkers. When the volatile biomarkers bind to the functionalized nanotube, a large change in current (orders of magnitude change) is measured using a potentiostat. The readout is a simple yes/no answer based on the change in current. It is a simple non-invasive diagnostic platform that can be applied to any disease that has a volatile biomarker. The detection is fast (minutes) portable, and requires minimal training to operate.

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Navillum	UU	MMEE	Licensee	\$40,000	Jacqueline Siy-Ronquillo	Navillum's Semiconductor nanocrystals utilizes a more cost effective manufacturing process which operates at significantly lower reaction temperatures.	Semiconductor nanocrystals (1-100 nm in size), which includes quantum dots, have unique size-dependent optical and electronic properties, enabling never before seen applications to science and technology. Despite their potential to improve a wide array of electronic devices including lighting, display and solar cells, nanocrystals are challenging to produce in commercial quantities. This is due to current expensive and small-scale fabrication methods requiring high temperatures. In contrast to existing techniques, our more cost effective patent-pending manufacturing process operates at significantly lower reaction temperatures. This enables scale-up of the synthesis while keeping high product quality and reproducibility.
TheraTarget	UU	LS	Licensee	\$40,000	Darwin Cheney	TheraTarget is developing a degradable, water-soluble, polymer drug carrier to which is attached an anti-cancer drug that is inert while attached to the polymer so it circulates through the bloodstream in an inactive form.	Our polymer drug carrier is constructed of a degradable, water-soluble copolymer (patented), to which is attached an anti-cancer drug. The drug is inert while attached to the polymer so it circulates through the bloodstream in an inactive form. This decreases non-specific toxicity. The drug carrier is small enough to be cleared by the kidneys, yet large enough to remain in circulation for a sufficient time to be concentrated at the solid tumor site. The linkages between the polymer and the drug have been designed to be cleaved only within the cell where the highly toxic drug is released--killing only the targeted cells. The drug carriers that do not reach the tumor cells travel in an inert form to the kidneys and are cleared from the body.
Vaporsens	UU	MMEE	Licensee	\$40,000	Benjamin Rollins	Vaporsens, is developing a detector to help public safety officials "sniff" out explosives and narcotics using a patented sensor that is more sensitive than any other on the market.	Vaporsens, is developing a detector to help public safety officials "sniff" out explosives and narcotics using a patented sensor that is more sensitive than any other on the market. What makes the sensor unique are highly absorbing nanowire "nets" that catch chemical vapors from the air. Different nanofibers are responsive to different chemical threats such as narcotics, explosives, or toxic chemicals. The sensor has exceptional speed (milliseconds), sensitivity (parts per trillion), and selectivity. Multiple nanofibers are placed on a single sensor in order to detect multiple targets. The patent pending sensor is based on years of materials science research at the University of Utah and has been partially funded by Homeland Security.
Veristride	UU	LS	Licensee	\$40,000	Stacy Bamberg	Veristride is developing a instrumentation worn on the shoes and a phone application (app) interface that provides real-time feedback to physical therapists on a patient's foot measurement and symmetrty	Our "Real-Time Rehab" consists of two components: instrumentation worn on the shoes and a phone application (app) interface that provides user feedback. The phone app provides feedback corresponding to the symmetry of gait, which is a ratio of the left foot's measurement to the right foot's measurement; one represents perfect symmetry (no limp). The user (i.e. with guidance from his/her physical therapist) can set the target symmetry along with an allowed range. The phone app provides feedback that is visual, auditory, or vibrotactile, or a combination. Our solution is unique because other options are orders of magnitude more expensive and require a laptop or commercial motion equipment in order to provide real-time feedback.
XoomPark	WSU	IT	Licensee	\$40,000	Ken Frei	XoomPark has created an online marketplace where event goers can conveniently reserve front-row parking at events in advance.	XoomPark creates an online marketplace where event goers can conveniently reserve front-row parking at the hottest events in advance from the closest parking providers. By reserving in advance, event goers eliminate the frustration of finding a quality spot and eliminate the long walk to the venue. Parking vendors are able to increase revenues by up-selling their best parking spaces and electronically collect payment from customers, thus eliminating any cash management problems. XoomPark also helps parking providers create more online awareness about their lots, leading to a decreased vacancy rate.